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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,477	01/23/2004	Christian Olsen	H0610.0360/P360	4942

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EXAMINER	
ONEILL, KARIE AMBER	
ART UNIT	**PAPER NUMBER**
1745	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/762,477	OLSEN ET AL.	
	Examiner	Art Unit	
	Karie O'Neill	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-10 and 12* is/are rejected.

7)☒ Claim(s) *4 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1-23-04, 10-12-04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities: it is believed by the examiner that the language in line 2 should read "or 2" instead of "and 2", because it would be considered a multiple dependent claim otherwise. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what I meant by "high temperature fuel cell". Any fuel cell, such as PEM, Solid Oxide and Molten Carbonate, can be considered a high temperature fuel cell depending on what the reference temperature is.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Washington et al. (US 5,300,370).

With regard to Claims 1, 9-10 and 12, Washington et al. disclose in Figure 5, an interconnect device or laminate fluid flow field assembly for a fuel cell comprising multiple fuel cell assemblies comprising two or more anode plate/MEA/cathode plate combinations, referred to as a fuel cell stack (column 2 lines 18-26), the interconnect device or fluid flow field assembly comprising a separator layer and a stencil layer consolidated along one of their respective major surfaces and cooperating to form at least one open-faced channel for conducting fluid (column 4 lines 23-41), having a plurality discontinuous flow field channels, each channel being closed in one end and having either an inlet side of an outlet side at the open end of the channel, each channel having an inlet side placed in alternating order with a channel having an outlet side, the inlet side of each channel placed in consecutive order on one side of the flow field assembly, and the outlet sides of each channel placed in consecutive order on the opposite side of the flow field assembly relative to the inlet side (see Figure 5), and a second layer of channels is located on the surface of the channel system because the fluid stream will be forced through the interstices or channels of the adjacent porous electrode material on either side of the inlet channel (128a-c) to one of the nearby outlet channels (138a-c) (column11 lines 61-68).

With regard to Claim 2, Washington et al. disclose in Figure 5, wherein the channel system has a plurality of seven discontinuous, straight, parallel flow field channels (column 11 lines 27-28).

With regard to Claim 7, Washington et al. disclose wherein the second layer of channels comprises a separate interlayer placed on the surface of the channel system. The first and second layers of the channel system is made up of a separator layer and a stencil layer forming a laminated assembly, the stencil layer being formed on the surface of the separator (column 4 lines 21-37).

With regard to Claim 8, Washington et al. disclose wherein the channels of the channel system are provided with distribution and collection holes in the form of a fluid inlet opening (122) and a fluid outlet opening (132) and other openings (146) formed therein and serving as the manifolds for the various fluid reactant and coolant streams within the fuel cell (column 11 lines 45-50).

With regard to Claim 11, wherein the fuel cell is a solid oxide fuel cell or a molten carbonate fuel cell is considered intended use because no specific structure of any fuel cell is imparted to the claim and is therefore given little to no patentable weight.

6. Claims 1-3, 6, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Koseki (US 5,234,776).

With regard to Claims 1 and 9, Koseki discloses in Figure 1, an interconnect device for a fuel cell (22) comprising an electrolyte (24), an anode (30) and a cathode (50), the interconnect device comprising an anode chamber (26) containing an anode with a plurality of ribs (32) or a channel system each channel being closed at one end and having either an inlet (38) or an outlet side at the open end of the channel each channel having an inlet side placed in alternating order with a channel having an outlet

side (46), the inlet side of each channel placed in consecutive order on one side of the interconnect or anode chamber (26), and the outlet sides of each channel placed in consecutive order on the opposite side of the interconnect relative to the inlet side (see Figure 4), and a second layer of channels is located on the surface of the system which can be seen in Figure 4 by the intersecting channels that act as first (vertical) and second (horizontal) layers.

With regard to Claim 2, Koseki discloses in Figure 4, both horizontal and vertical grooves which are straight and parallel channels (column 9 lines 54-56).

With regard to Claim 3, Koseki discloses in Figure 4, wherein the second layer of channels (horizontal) intersect the channels in the system (vertical channels), the second layer of channels (horizontal) being closed at both ends when placed into the anode chamber and are surrounded by the frame that closes off the ends of each of the channels (as can be seen in Figure 3 by the way the anode with channels fits into the frame to form the complete anode chamber), and the channels of the channel system (vertical channels) remain open throughout their length, which in interpreted by the examiner to mean that the channels are not blocked in any way throughout their length or vertical passage.

With regard to Claim 6, Koseki discloses in Figure 4, wherein the second layer of channels (horizontal) is located on the surface of the channel system or anode (30), the second layer of channels (horizontal) intersect the channels in the system (vertical channels), the second layer of channels (horizontal) being closed at both ends when placed into the anode chamber and are surrounded by the frame that closes off the

ends of each of the channels (as can be seen in Figure 3 by the way the anode with channels fits into the frame to form the complete anode chamber), and the channels of the channel system (vertical channels) are partly closed, which in interpreted by the examiner to mean that the channels are closed at the edges when they are surrounded by the frame, just like the horizontal channels.

Allowable Subject Matter

7. Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: Claims 4 and 5 would be allowable because the closest prior art, Washington et al. (US 5,300,370) do not teach or fairly suggest, wherein the second layer of channels are closed at their surface and at both ends, and are placed parallel to and directly above the channels in the channel system, the closed surface being perforated in the area of the channels.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karie O'Neill whose telephone number is (571) 272-

8614. The examiner can normally be reached on Monday through Friday from 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karie O'Neill
Examiner
Art Unit 1745

KAO

DAH-WEI YUAN
PRIMARY EXAMINER